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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,366	12/27/2001	Noel John De Souza	U 013784-9	7802

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EXAMINER	
FLOOD, MICHELE C	
ART UNIT	**PAPER NUMBER**
1654	

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/033,366	DE SOUZA ET AL.	
	Examiner	Art Unit	
	Michele C. Flood	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5,6,8,9,11,12,14,15,17,18,20,21,23,24 and 26-31* is/are pending in the application.

4a) Of the above claim(s) *See Continuation Sheet* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *30 and 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *0903* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Continuation of Disposition of Claims: Claims withdrawn from consideration are 1,2,5,6,8,9,11,12,14,15,17,18,20,21,23,24 and 26-29.

DETAILED ACTION

Applicant's arguments filed on September 18, 2003 have been fully considered but they are not persuasive for the reasons set forth in the previous Office action and for the reasons set forth below. Acknowledgment is made of the receipt and entry of the declaration filed by Noel John de Souza, Ph.D.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 30 and 31 are under examination.

Response to Arguments

Claims 30 and 31 as amended remain rejected under 35 U.S.C. 102(b) as anticipated by Thatte et al. (A) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Thatte et al. (U), as evidenced by Hoffmann (V) and Kruger et al. (AF, WO 91/08750). The rejection stands for the reasons set forth in the previous Office action and for the reasons set forth below.

Applicant claims an extract of *Tinospora cordifolia* prepared by a process comprising treating pulverized above ground parts of the plant *Tinospora cordifolia* with water at an elevated temperature for a period of about 1.5 hours to 2.5 hours, filtering and concentrating to provide an extract that has immunomodulatory activity as measured by its potential to increase phagocytosis by polymorphonuclear leukocyte by a value not less than 20% over a base value, and has one constituent which has a mass spectrometric M+ value of m/z 480 mass units and is present to an extent of not

less than 35% of two identified peak areas of a liquid chromatography mass spectrometry single ion recording (LC-MS SIR) chromatogram, and has a second constituent which has a mass spectrometric M+ value of m/z 341 mass units and is present to an extent of not more than 65% of the two identified peak areas of the LC-MS SIR chromatogram of a methanol soluble content of said extract. Applicant further claims a composition comprising the extract of claim 30.

Applicant argues that the claimed invention is not the same as the *Tinospora cordifolia* extract described by Thatte et al. However, this is not persuasive because Thatte teaches a composition comprising an extract of *Tinospora cordifolia* having immunomodulatory activity and phagocytic activity. On page 13, Column 2, lines 13-16, Thatte teaches preparing the extract of *Tinospora cordifolia* as follows: "The dried, powdered stem was made into a decoction after boiling in water . . .". Thatte further teaches administering the extract to mice after injection of *Escherichia coli* to assess percent phagocytosis, i.e., the number of neutrophils (polymorphonuclear leukocytes) that had ingested *E. coli*. See page 14, Column 1, under "*Experiment 4: Neutrophil function*". On page 14, Column 2, lines 28-38, Thatte teaches, "Neutrophils from untreated control mice demonstrated a 34.33 +/ -3.44% phagocytosis of *E. coli*. As compared to this, phagocytic function of neutrophils of the *Tinospora cordifolia* treated group was 53.66 +/- 5.68% ($p < 0.001$), stimulated, as compared to control and that in the gentamicin treated group 19 +/ -2.75 ($p < 0.001$), depressed, as compared to control). The intracellular bactericidal capacity of neutrophils from the *Tinospora cordifolia* treated group was 52.41 +/- 5.47% as compared to a control of 30.45 +/ -

3.19% as compared to a control of 30.45 +/- 6.19% ($p < 0.001$)." On page 15, Column 1, lines 16-21, Thatte further teaches that the prior art has shown that *Tinospora cordifolia* produces leucocytosis with predominant neutrophilia and stimulates macrophage function without significant toxicity.

Applicant further argues that since the referenced plant extract does not possess *in vitro* bactericidal activity it is clear that the extract of the presently claimed invention cannot be the same as the extract of Thatte. Applicant also argues that the claimed composition has two constituents having defined chemical properties; and, that Thatte does not describe how long the dried powdered stem was boiled in water. Lastly, Applicant argues, "Therefore, since the plant components and the process used to prepare the extracts of this invention are different from what is disclosed from what is disclosed Thatte, Hoffman and Kruger and the antibacterial properties of the claimed composition differ from those of Thatte, the claimed invention is novel and nonobvious over Thatte and the combination of Thatte, Hoffman and Kruger." Finally, with regard to the declaration of Dr. Souza, the Office finds that the data providing that the instantly claimed composition has *in vitro* bactericidal activity is noteworthy. However, as Applicant's arguments are neither persuasive nor commensurate in scope to the limitations of the claimed invention, the disclosure of Dr. Souza is unpersuasive and not commensurate in scope to the limitations of the claimed invention because the claims are drawn to an extract of *Tinospora cordifolia* and a composition thereof, prepared by a process comprising treating the pulverized above ground parts of the claim-designated plant with water at an elevated temperature for a period of about 1.5 hours to 2.5 hours,

filtering and concentrating to provide an extract that has immunomodulatory activity as measured by its potential to increase phagocytosis by polymorphonuclear leukocyte by a value of not less than 20% over a base value, and has one constituent having a defined mass spectrometric value and is present to an extent of not less than 35% of two identified peak areas of a liquid chromatography mass spectrometry single ion recording (LC-MS SIR) chromatogram, and has a second constituent having a defined mass spectrometric value and is present to an extent of not more than 65% of the two identified peak areas of the LC-MS SIR chromatogram of a methanol soluble content of said extract. For example, Thatte teaches an aqueous extract from the stems of *Tinospora cordifolia* and a composition thereof, wherein the extract was prepared comprising boiling dried, powdered stems into a decoction after boiling in water. Although Thatte does not expressly teach pulverizing the stems before boiling, and filtering and concentrating the plant material to provide an extract, it is generally assumed in the art that the preparation of a plant extract includes the instantly claimed process steps. For instance, on page 23, Hoffmann teaches a method of making a plant decoction comprising the instantly claimed process steps of breaking up the plant material to make a powder (pulverizing), boiling, filtering, and concentrating the plant material to provide a plant extract. See insert 'To Make A Decoction' and 'Decoction'. Moreover, on page 4 in "Example 1", Kruger teaches a method of processing the above ground parts of *Tinospora cordifolia*: "The stalk of well-washed plant Tinospora cordifolia are cleaned, peeled and cut into smaller pieces. These pieces are finally crushed. 4 weight parts of water is added to 1 weight part of the so obtained mass and

it is mixed into an uniform, pulp-type mass from which the fibrous substances are removed. The residue is made free from excess water by decantation or evaporation, dried and made into a powder." The cited reference discloses an extract of *Tinospora cordifolia* prepared by the process steps of boiling the dried, powdered stems of the claim-designated plant into a decoction, ---- which appears to be identical to the presently claimed product-by-process, since it exhibits immunomodulatory activity as measured by its potential to increase phagocytosis by polymorphonuclear leukocyte by a value not less than 20% over a base value; and, therefore, it is considered to anticipate the claimed extract of *Tinospora cordifolia*. Moreover, the cited reference discloses an extract of *Tinospora cordifolia* ---- which appears to be identical to the presently claimed extract of *Tinospora cordifolia*, since the ingredients, the source of the ingredients, the experimental parameters of making the claim-designated plant extract, the process steps, and the beneficial functional effect are one and the same or essentially the same, as claimed; hence, it is considered to anticipate the claimed product-by-process. Thus, absent evidence to the contrary, it would appear that the process steps of filtering and concentrating the boiled decoction of stems taught by Thatte would inherently encompass the method of making the referenced plant extract, since the instantly claimed process steps are generally performed in the making of plant extracts. Thus, with regard to the claimed limitations that the claimed product-by-process has one constituent having a defined mass spectrometric value and is present to an extent of not less than 35% of two identified peak areas of a liquid chromatography mass spectrometry single ion recording (LC-MS SIR) chromatogram,

and has a second constituent having a defined mass spectrometric value and is present to an extent of not more than 65% of the two identified peak areas of the LC-MS SIR chromatogram of a methanol soluble content of said extract, wherein the parts of the plant are treated with water at an elevated temperature for a period of about 1.5 to 2.5 hours, absent evidence to the contrary, it would appear that the claimed two constituents having the specified properties would be inherent to the *Tinospora cordifolia* extract taught by Thatte, since the method of making the referenced composition is one and the same, or essentially the same, as claimed by Applicant.

In the alternative, even if the claimed extract is not identical to the referenced extract with regard to some unidentified characteristics, the differences between that which is disclosed and that which is claimed are considered to be so slight that the referenced extract preparation is likely to inherently possess the same characteristics of the claimed extract preparation particularly in view of the similar characteristics which they have been shown to share. For instance, even if the claimed method of preparing an extract of *Tinospora cordifolia* that has immunomodulatory activity as measured by its potential to increase phagocytosis by polymorphonuclear leukocyte by a value of not less than 20% over a base value, and has one constituent having a defined mass spectrometric value and is present to an extent of not less than 35% of two identified peak areas of a liquid chromatography mass spectrometry single ion recording (LC-MS SIR) chromatogram, and has a second constituent having a defined mass spectrometric value and is present to an extent of not more than 65% of the two identified peak areas of the LC-MS SIR chromatogram of a methanol soluble content of said extract is not

identical to the referenced product-by-process with regard to the experimental parameter of the process steps of filtering and concentrating to provide a plant extract, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the instantly claimed process steps because pulverizing, filtering and concentrating is simply a question of processing an aqueous medium comprising plant parts to result the effect of providing a plant extract. At the time the invention was made, one of ordinary skill in the art would have been motivated and one would have had a reasonable expectation of success to add the instantly claimed process steps of making the *Tinospora cordifolia* extract taught by Thatte to provide the claimed invention because the effective varying of the process steps of preparing the referenced plant extract would have been no more than a routine matter of optimization for one of ordinary skill in the art practicing the invention, given that Thatte teaches that his plant extract had immunomodulatory activity as measured by its potential to increase phagocytosis of neutrophils (polymorphonuclear leukocytes) by a value of not less than 20% over a base value. Thus, it would have been merely a matter of judicious selection to one of ordinary skill in the art at the time the invention was made to use the instantly claimed process steps of filtering and concentrating the pulverized above ground parts of the plant *Tinospora cordifolia* at the claim-designated period of time of temperature elevation because it would have been well in the purview of one of ordinary skill in the art practicing the invention to provide the claimed product-by-process, since Thatte teaches process steps of decoction comprising boiling powdered stems of *Tinospora cordifolia* to obtain a extract having immunomodulatory and phagocytic activities,

Hoffmann teaches how to make a plant decoction, and Kruger teaches treating the above ground parts of *Tinospora cordifolia* inherently encompass pulverizing, filtering and concentrating the claim-designated plant material to provide an extract having therapeutic activity. The claimed invention is no more than the routine optimization of a result effect variable. Thus, the claimed extract would have been obvious to those of ordinary skill in the art within the meaning of USC 103.

The United States Patent and Trademark Office is not equipped to conduct experimentation in order to determine whether on not Applicant's claimed extract differs and, if so, to what extent, from that discussed in the references. Therefore, with the showing of the references, the burden of establishing non-obviousness by objective evidence is shifted to Applicant.

Accordingly, the claimed invention as a whole was at least *prima facie* obvious, if not anticipated by the reference, especially in the absence of sufficient, clear, and convincing evidence to the contrary.

Please note, "The patentability of a product does not depend upon its method of production. If the product in [a] product-by-process claim is the same as or obvious from a product of the prior art, [then] the claim is unpatentable even though the prior [art] product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward

with evidence establishing unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michele Flood whose telephone number is (703) 308-9432. The examiner can normally be reached on Monday through Friday from 7:15 am to 3:45 pm. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is (703) 308-0196 or the Supervisory Patent Examiner, Brenda Brumback whose telephone number is (703) 306-3220.

MCF

December 8, 2003

CHRISTOPHER R. TATE
PRIMARY EXAMINER